IN THE SPECIFICATION

Please amend the specification at page 2, lines 10-20 (paragraph [0007] of the published application) as follows:

In high area density recording systems, media noise may be responsible for more than 90% of the total noise power. Typically, media noise arises from fluctuations in the magnetization of the medium, and can be generally classified into three types of noise: transition noise, particulate noise and modulation noise. Particulate noise refers to signal interference due to random dispersion of magnetic particles or grains in the magnetic medium. Particulate noise is stationary, meaning that it is not dependent on user data recorded on the media. By contrast, transition noise and modulation noise are both non-stationary, meaning that they depend on the user data recorded in the media, or they are pattern-dependent.

Please amend the specification at page 6, lines 20-26 (paragraph [0034] of the published application) as follows:

From the equation for the readback signal r(t), it can be seen that the superposition model assumes the recording channel is a random channel, which depends on the user data (ak). In addition to the recording channel appearing to be a random channel~~, recording~~. Recording channels operating at high densities experience phenomena like data-dependent nonlinearity and asymmetry, which also make the recording channel appear to be data dependent.

Please amend the specification at page 10, line 24 to page 11, line 2 (paragraphs [0048] and [0049] of the published application as follows:

More specifically, referring to FIG. 3, each equalizer (26A,26B...,26n) is optimized for a specific data pattern, which is determined by the following data pattern:

$$a_{k-M_2}^{k+M_1} \stackrel{\Delta}{=} \{a_{k-M_2}, a_{k-M_2+1}, \ldots, a_{k+M_1}\}$$

~~the following data pattern~~